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Finding missing angles using algebra worksheets

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Finding Angles in Triangles: Formulas and Methods There are multiple ways to find angles in a triangle, depending on what information you have. One method involves using formulas derived from the law of cosines. If you know three sides of a triangle, you can use the following formulas: cos(α) = (b² + c² - a²) / (2bc) α = arccos((b² + c² - a²) / (2bc)) Similarly, for the second angle: cos(β) = (a² + c² - b²) / (2ac) β = arccos((a² + c² - b²) / (2ac)) And for the third angle: cos(γ) = (a² + b² - c²) / (2ab) γ = arccos((a² + b² - c²) / (2ab)) If you know two sides and one angle, you can use the law of cosines to find the unknown side, and then apply these formulas to find the missing angles. Alternatively, if the angle is not between the given sides, you can use the law of sines. For example, if you know a, b, and α, you can use the following formula: a / sin(α) = b / sin(β) β = arcsin(b × sin(α) / a) You can also use the triangle angle sum theorem to find the missing angle: γ = 180° - α - β. Remember, there's an easier way! You can simply use the triangle angle sum theorem to find the missing angle: α = 180° - β - γ; β = 180° - α - γ; and γ = 180° - α - β.